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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## ZINC IN SEPTEMBER 1996

Domestic mine production declined for the second consecutive month. September production was nearly 4% lower than the previous month's production and about 3% lower when compared with production in September 1995. Smelter production increased by nearly 10%, to the same output level as in July and about 5% higher than that in September 1995. Apparent consumption of refined zinc in September was slightly less than in August and nearly 4% lower than consumption in September 1995.

The *Platt's Metals Week* composite price for North American Special High Grade zinc in September was slightly higher than in August and nearly 3% higher than a year before. Premiums added to the London Metal Exchange base price for refined zinc went up from between 5.5-6.0 cents per pound (¢/lb) at the beginning of September to about 6.5¢/lb by the end of month, revealing growing tightness in the spot market. Despite escalating demand, the premiums for refined zinc did not increase much above 6 ¢/lb, mainly because at that price it becomes profitable for consumers to import material from overseas, where stocks continued to be relatively high.

The U.S. zinc industry, as a result of a successful delisting petition, has been told by the Environmental Protection Agency that zinc will not be classified as a "hazardous constituent." This petition was filed by Bekaert Steel Corp. requesting exclusion from the hazardous waste list of the wastewater treatment sludges, containing zinc and other metals, generated at its electroplating plant in Rogers, Arkansas. The quantity excluded from hazardous waste control amounts to 955 cubic meters of waste per year, which must be analyzed annually and made available for inspection.<sup>1</sup>

The Greens Creek Mine, located on Admiralty Island near Juneau, Alaska, has reportedly recommenced operations 6 months ahead of schedule; it was to have begun operations during the first quarter of 1997. The silver/zinc/lead/gold mine is a joint venture between Kennecott Greens Creek Mining Co. (70.3%) and Hecla Mining Company (29.7%). During the 2 years the mine was closed, a new high-grade ore deposit was

identified, making mining profitable at today's metal prices. The opportunity for discovery of additional deposits appears excellent, largely because of a land exchange agreement signed with the U.S. Forest Service that will allow additional exploration on 7,500 acres around the present mining area.<sup>2</sup>

Because the 1994 sale of government-owned Centromin as one unit failed, Peru's state privatization commission decided to break up the state mining enterprise and sell each division individually. After the sale of its copper and gold properties at the beginning of 1996, the sale of Yauricocha zinc complex, one of Centromin's minor properties, did not attract any bids by the Sept. 9 deadline. The Yauricocha complex consists of a zinc/lead/copper/silver mine with a 2.8-million-ton reserve and a 1,500-ton-capacity mill. Ore produced annually typically contains about 18,000 tons of zinc, 7,000 tons of lead, 2,000 tons of copper, and 36.6 tons of silver. The 1996 production of zinc ore by Centromin, Peru's largest producer, was 169,333 tons of contained zinc, a 3.7% increase over the 1995 output.<sup>3</sup>

Minera Iscaycruz, Peru's richest zinc mine, plans to launch a tender next year to develop, in a joint venture, two other orebodies on its 27,000-hectare concession in the central Andes. The two orebodies currently being mined make up only 5% of the total area. Iscaycruz aims to produce 125,000 tons of zinc concentrates annually. The mine has proven and probable reserves of 2.7 million tons, with average ore grades of 21.4% Zn and 2.2% Pb. Iscaycruz is 45%-owned by Glencore of Switzerland, 30% by Perubar S.A., and 25% by state miner Empresa Minera Peru S.A. (Mineroperu).<sup>4</sup>

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<sup>1</sup>Platt's Metals Week. US EPA Excludes Zinc as Hazardous Waste in Petition. Sept. 23, 1996, p. 9.

<sup>2</sup>The Mining Record. Greens Creek Recommences Operations. V. 107, No. 36, Sept. 4, 1996, p. 7.

<sup>3</sup>Platt's Metals Week. Centromin Sell-off Hits Snag at Yauricocha. Sept. 16, 1996, p. 8.

<sup>4</sup>Platt's Metals Week. Peru's Iscaycruz Zinc Mine To Seek Joint Venture. Sept. 9, 1996, p. 8.

TABLE 1  
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1995 p/			1996			
	Jan.-Sept.	September	Jan.-Dec.	July	August	September	Jan.-Sept.
Production:							
Mine, recoverable zinc	454,000 r/	47,600 r/	601,000	53,700	48,000	46,200	445,000
Smelter, slab zinc	276,000	29,200	363,000	30,800	27,400	30,800	271,000
Oxide, (gross weight)	96,800 r/	11,700 r/	130,000	9,100	9,870	10,500	95,700
Consumption:							
Slab zinc, reported	539,000 r/	58,800 r/	638,000	48,900	53,000 r/	51,700	488,000
Ores e/ 2/	1,800	200	2,400	200	200	200	1,800
Zinc-base scrap e/ 2/	90,000	10,000	120,000	10,000	10,000	10,000	90,000
Copper-base scrap e/ 2/	99,000	11,000	132,000	11,000	11,000	11,000	99,000
Aluminum-and magnesium-base scrap e/ 2/	630	70	840	70	70	70	630
Total e/	730,000 r/	80,100 r/	893,000	70,200	74,300	72,900	679,000
Apparent consumption, metal 3/	956,000 r/	97,600 r/	1,240,000	86,200 r/	94,100 r/	94,000	855,000
Stocks of slab zinc, end of period:							
Producer 4/	XX	7,770 r/	XX	8,760	10,500	11,600	XX
Consumer 5/	XX	40,300	XX	41,300 r/	39,200 r/	38,600	XX
Merchant	XX	7,140	XX	1,930	1,350	4,130	XX
Total	XX	55,300 r/	XX	52,000 r/	51,100 r/	54,300	XX
Imports for consumption:							
Slab zinc	664,000	62,900	856,000	59,200	63,000	NA	510,000 6/
Oxide	35,700	3,790	49,100	4,470	4,470	NA	38,300 6/
Ore and concentrate	9,760	--	10,300	--	4,890	NA	6,390 6/
Exports:							
Slab zinc	2,890	114	3,080	167	246	NA	1,330 6/
Waste and scrap (zinc content)	42,100	4,510	55,900	2,660	2,880	NA	32,500 6/
Ore and concentrate (zinc content)	386,000	189,000	424,000	100,000	96,600	NA	223,000 6/
Oxide	4,850	613	7,090	480	499	NA	4,140 6/
Price:							
Platt's Metals Week North American Special							
High Grade, average, cents per pound	54.25	50.05	55.83	49.87	51.26	51.39	50.63

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Recoverable zinc content.

3/ Smelter production + imports - exports + beginning stocks - ending stocks.

4/ Includes stocks held at smelters and elsewhere by producers, as reported by ABMS, plus estimated additional data for smelters not reporting to ABMS.

5/ In addition to stocks reported by consumers on a monthly basis, about 10,000 tons was estimated to be held by companies reporting on an annual basis only.

6/ Includes data through August only. September data not available at time of publication.

TABLE 2  
MINE PRODUCTION OF RECOVERABLE ZINC IN THE UNITED STATES 1/

(Metric tons)

State	1995 p/			1996			
	Jan. - Sept.	September	Jan. - Dec.	July	August	September	Jan. - Sept.
Missouri	37,300 r/	3,930 r/	47,000	W	W	W	W
Other States 2/	416,000	43,700	554,000	53,700	48,000	46,200	445,000
Total	454,000 r/	47,600 r/	601,000	53,700	48,000	46,200	445,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing proprietary data; included in "Other States."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes Alaska, Colorado, Idaho, Illinois, Montana, New York, Oregon, and Tennessee, and State indicated by "W."

TABLE 3  
ESTIMATED TOTAL PRODUCTION, SHIPMENTS, AND STOCKS OF SLAB ZINC 1/ AND ZINC OXIDE 2/, BY MONTH 3/

(Metric tons)

Month	Stocks at beginning of month		Production		Shipments		Stocks at end of month 4/	
	Slab Zinc	Zinc Oxide	Slab Zinc	Zinc Oxide	Slab Zinc	Zinc Oxide	Slab Zinc	Zinc Oxide
1995: p/								
Jan.-Sept.	XX	XX	276,000	96,800	279,000	99,300	XX	XX
September	7,190	6,430	29,200	11,700	29,700	11,100	6,700	6,980
October	6,650	6,980	29,200	11,200	29,600	11,300	6,240	6,800
November	6,240	6,800	28,000	11,100	28,900	11,300	5,340	6,620
December	5,340	6,620	30,000	10,900	29,200	10,500	6,170	6,990
Total	XX	XX	363,000	130,000	368,000	132,000	XX	XX
1996:								
January	6,170	6,990	31,300	10,700	29,400	12,900	8,030	4,760
February	8,030	4,760	29,400	10,400	29,800	12,000	7,660	3,100
March	7,660	3,100	30,400	12,200	31,100	11,500	6,900	3,740
April	6,900	3,750	29,800	11,400	29,400	11,600	7,330	3,530
May	7,330	3,530	30,500	11,200	30,800	11,400	7,080	3,390
June	7,080	3,390	30,400	10,300	30,300	9,920	7,180	3,800
July	7,180	3,800	30,800	9,100	30,100	9,560	7,870	3,340
August	7,870	3,340	27,400	9,870	26,300	10,200	8,960	3,060
September	8,960	3,060	30,800	10,500	29,700	10,400	10,100	3,210
Jan.-Sept.	XX	XX	271,000	95,700	267,000	99,500	XX	XX

p/ Preliminary. XX Not applicable.

1/ ABMS reported data, plus additional reported and estimated data for smelters not reporting to ABMS.

2/ Excludes impure zinc oxide produced from other processes.

3/ Data are rounded to three significant digits; may not add to totals shown.

4/ In addition to stocks held at smelters, reported by ABMS, 1,460 tons of zinc was held elsewhere in September 1996.

Sources: ABMS and U.S. Geological Survey.

TABLE 4  
ESTIMATED DISTRIBUTION 1/ OF ZINC OXIDE SHIPMENTS BY INDUSTRY 2/ 3/

(Metric tons, gross weight)

Industry	1995 p/			1996			
	September r/	Jan.-Sept. r/	Jan.-Dec.	July	August	September	Jan.-Sept.
Agriculture	W	W	W	W	W	W	W
Ceramics	314	2,430	3,390	454	433	424	4,410
Chemicals	2,570	22,500	30,000	2,140	2,030	2,150	21,400
Paints	399	3,580	4,790	257	271	307	3,380
Photocopying	W	W	W	W	W	W	W
Rubber	7,300	63,600	85,300	6,310	7,040	7,100	65,900
Other	552	4,950	8,900	395	379 r/	401	4,330
Total	11,100	97,000	132,000	9,560	10,200	10,400	99,500

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5  
APPARENT CONSUMPTION OF SLAB ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	1995 p/			1996			
	September r/	Jan.-Sept. r/	Jan.-Dec.	July	August	September	Jan.-Sept.
Galvanizing:							
Sheet and strip	38,200	357,000	490,000	36,700 r/	38,500 r/	38,900	346,000
Other	12,300	121,000	168,000	11,300 r/	12,100	12,300	110,000
Total	50,500	479,000	658,000	48,000 r/	50,600 r/	51,200	456,000
Brass and bronze	10,200	119,000	165,000	11,400 r/	12,600 r/	12,800	111,000
Zinc-base alloy	17,100	189,000	250,000	13,700	16,700 r/	15,400	148,000
Other uses 2/	19,900	170,000	166,000	13,000	14,200 r/	14,500	140,000
Total apparent consumption	97,600	956,000	1,240,000	86,200 r/	94,100 r/	94,000	855,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes zinc used in making zinc dust, wet batteries, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, zinc oxide, and miscellaneous uses not elsewhere specified.

TABLE 6  
AVERAGE MONTHLY ZINC PRICES

Month	North American Special High Grade cents/lb.	LME cash		Sterling exchange rate dollars/£
		cents/lb.	£/M.T.	
1995:				
September	50.05	44.73	632.61	1.558970
October	49.68	44.41	620.52	1.577929
November	52.02	46.75	659.65	1.562476
December	50.87	46.18	660.89	1.540505
Year average	55.83	46.82	656.59	1.572016
1996:				
January	50.59	46.22	666.59	1.528771
February	50.69	46.98	674.37	1.535960
March	51.24	48.26	696.72	1.527062
April	50.61	47.42	689.57	1.516041
May	50.50	46.98	683.57	1.515236
June	49.57	45.75	654.20	1.541590
July	49.87	45.36	643.95	1.553005
August	51.26	45.67	649.68	1.549882
September	51.39	45.37	641.53	1.559290

Source: Platt's Metals Week.

TABLE 7  
U.S. EXPORTS OF ZINC 1/

Material	1995		1996			
			August		Jan.-Aug. 2/	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Slab zinc	3,080	\$4,340	246	\$282	1,330	\$1,590
Ore and concentrate (zinc content)	424,000	201,000	96,600	43,200	223,000	102,000
Waste and scrap (zinc content)	55,900	36,100	2,880	2,080	32,500	20,900
Powders, flakes, and dust (zinc content)	8,840	15,800	1,890	3,700	8,640	16,600
Oxide (gross weight)	7,090	9,110	499	679	4,140	6,260
Chloride	1,690	1,250	76	70	1,070	900
Sulfate	4,210	2,260	448	262	3,300	1,880
Compounds, other	1,690	4,350	41	275	1,060	3,590

1/ Data are rounded to three significant digits.

2/ September data not available at time of publication.

Source: Bureau of the Census.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1995		1996			
			August		Jan.-Aug. 2/	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Slab zinc	856,000	\$903,000	63,000	\$65,800	510,000	\$543,000
Ore and concentrate (zinc content)	10,300	4,380	4,890	2,110	6,390	2,700
Waste and scrap (gross weight)	42,300	19,700	3,290	1,240	21,700	9,000
Powders, flakes, and dust (gross weight)	11,700	20,400	1,080	1,800	6,780	11,500
Oxide (gross weight)	49,100	54,200	4,470	4,640	38,300	38,700
Chloride	2,450	2,370	171	158	1,530	1,360
Sulfate	5,400	3,820	369	288	3,010	2,150
Compounds, other	1,850	2,490	98	128	962	977
Dross, ashes, and fume (zinc content)	10,900	8,260	1,280	885	10,000	7,050

1/ Data are rounded to three significant digits.

2/ September data not available at time of publication.

Source: Bureau of the Census.

TABLE 9  
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	1995	1996		1995	1996	
		August	Jan.-Aug. 2/		August	Jan.-Aug. 2/
Ore and concentrate: (zinc content)						
Mexico	7,030	1,640	3,170	7,030	1,640	3,140
Peru	5,540	3,330	4,760	3,310	3,260	3,260
Other	463	70	230	15	--	--
Total	13,000	5,040	8,160	10,300	4,890	6,390
Blocks, pigs, or slab:						
Australia	15,400	--	6,970	18,200	--	7,350
Brazil	52,900	2,800	21,500	67,800	2,800	21,500
Canada	468,000	43,300	349,000	469,000	43,300	349,000
Finland	13,500	2,000	4,000	13,500	2,000	4,000
Mexico	99,200	8,070	63,700	99,200	8,070	63,700
Peru	21,500	700	20,000	21,500	700	20,000
Russia	12,800	4,630	7,300	12,800	4,630	7,300
Spain	109,000	--	25,600	98,000	1,000	30,300
Other	55,300	497	5,060	53,700	497	6,690
Total	848,000	62,000	505,000	856,000	63,000	510,000
Dross, ashes, & fume (content)	10,900	1,280	10,000	10,900	1,280	10,000
Grand total	872,000	68,300	523,000	877,000	69,200	527,000
Other (gross weight):						
Waste and scrap	42,300	3,290	21,700	42,300	3,290	21,700
Sheets	332	2,620	9,670	332	2,620	9,670
Dust, powder, flakes	11,700	1,080	6,780	11,700	1,080	6,780

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ September data not available at time of publication.

Source: Bureau of the Census.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF ZINC OXIDE, BY  
COUNTRY 1/

(Metric tons)

Country	1995	1996	
		August	Jan.-Aug. 2/
Canada	24,800	2,240	18,200
China	3,040	--	2,070
Mexico	16,600	1,750	14,900
Other	4,640	480	3,070
Total	49,100	4,470	38,300

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ September data not available at time of publication.

Source: Bureau of the Census.